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ABSTRACT

The report describes a study of the sex ratios in learning disabilities among 305 Israli children in kindergarten, second grade, and fifth grade which found no gender differences in reading disability cases. Contrary findings of an apparent sex-linked component of learning disabilities among U.S. children are examined. (CL)

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Cultural Influences on Sex Ratios in Learning Disabilities

First World Congress on
Future Special Education of
The Council for Exceptional Children

University of Stirling
Stirling, Scotland
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Research in another culture can provide us with valuable insights and perspectives on problems in our own culture. Armed with this conviction, a conviction traditionally held by all researchers who study human variation, this investigator undertook a study of learning disabilities in a culture very different than her own.

The culture selected for this study was a federation of 75 Collectives in Israel called Kibbutzim. The first collective was founded in 1905. This kibbutz federation, in comparison to other kibbutz federations, practiced the most comprehensive communalism. This was evident in their living style; their ownership of property and their organization of production and consumption. In addition, each member-collective strongly adhered to the principles of collective child-rearing and to equality of the sexes. A random sample was drawn from this entire population of 2000 kindergarteners, second-graders and fifth-graders.

A seemingly 'sex-linked' component of learning disabilities among American school-children stimulated the interest of this investigator to ascertain if this component was also apparent among kibbutz children. Given the similar socialization experienced by kibbutz children of both sexes, the presence or absence of this component among them could help determine if its origins in American society are physiological or cultural in nature. In the States, girls demonstrate a consistently lower incidence of all learning and behavioral disabilities. Girls also consistently surpass boys in the areas of reading performance and reading readiness.

Are such unequal sex ratios evident among kibbutz children as well? The professional literature amply indicates the exceptionality of kibbutz children in other areas of personality. For example, not one case of childhood psychosis (Kaffman, 1961); juvenile delinquency, homosexuality or drug abuse (Neubauer, 1965) have been detected. Furthermore, kibbutz youth have been ranked higher than their American and Israeli counterparts in the areas of; intellectual functioning (Rabin, 1961); emotional maturity (Rabin, 1961); cooperativeness (Shapira, 1970); and responsiveness to justice (Kohlberg, 1971).

To help understand the uncritical acceptance in the States of the assertion that more boys than girls are affected by learning disabilities of a physiological nature, one must read the convincing case made by Bentzen, 1963; MacFarlane, Allen, and Honzik, 1954; and Anthony, 1970. Masland, Sarason and Gladwin sum up the findings from the literature on this phenomenon as follows, "up until puberty it is extremely difficult to find a pathological condition in which the evidence among girls is greater than among boys", (p. 263).

Of all the disabilities noted for unequal sex ratios, reading disability exhibits the greatest disparity. The ratio averages ten boys per girl (Mumpower, 1970; Bentzen, 1963; Durrell, 1956; Wyatt, 1966). The purported phenomenon of female reading superiority is also buoyed by an overwhelming body of evidence; Dykstra and Tinney, 1969; Gates, 1961; Stanchfield, 1971. More recent support for this superiority is found in Maccoby and Jacklin's Psychology of Sex Differences (1974). Following the two authors painstaking reexamination and debunking of most purported sex differences, Maccoby and Jacklin conclude that female

superiority in reading is one of the very few solidly established sex differences.

A review of the preceding literature may easily lead one to conclude that a genetic or physiological basis does exist for this sex-linked phenomenon. In fact, most researchers have reached this conclusion and used it as a basis for developing physiological theories of male reading disability as well as costly remediation programs based on neurological models.

Three of these theories have gained prominence and were tested on kibbutz children. They are as follows: 'Maturational Lag' - boys' reading ability is considered to 'lag' behind girls' due to their slower rate of maturation; 'Crossed Dominance' - the lack of dominance of one cerebral hemisphere over the other is a condition purported to be more prevalent among males and results in reading disability; and one that I have called the 'Vulnerability of the Male Organism' - the male organism's vulnerability to stress and trauma as well as its slower maturation accounts for male reading disabilities. However there have been recent American disclosures of sexist bias operating in determining who shall be labeled as learning disabled (Hobbs, 1975). Such disclosures raised doubts in this investigator's mind as to the reliability of the American data upon which the three physiological theories have based their premises. Additional impetus for the pursuit of this investigation derives from the fact that all the evidence cited for the existence of this sex-linked phenomenon originate primarily from American clinics and American school systems. American researchers do not differentiate those aspects of reading disability which may be

culture-specific from those which may be physiological in origin. Such an omission, they explain, is inevitable until that time when boys and girls can be socialized in the same way. Fortunately, similar socialization for boys and girls does exist in kibbutz culture and that is one reason why this investigation was undertaken there. The kibbutz society served as an "in-vivo" laboratory in which to test the three prominent physiological theories accounting for male reading disability as well as to clarify the roles culture and physiology play in the areas of reading ability, reading readiness and learning disabilities.

Within kibbutz society both the group structure and kibbutz ideology appear to promote similar sex-role socialization. From the time of birth until the age of eighteen, the kibbutz child is raised as a part of the Kvutza, his/her peer group. In this Kvutza community, which is a separate physical unit within the kibbutz, the child sleeps, eats, plays, studies and works. There is no segregation by sex in sleeping quarters or any other living quarters until age eighteen. This group, then, is a living unit as well as an educational grade.

The Kvutza is also the primary social unit. In fact it is the only social unit tolerated. Sex-segregated groupings, as well as any other sub-grouping, would be frowned upon as threats to the cohesiveness of the Kvutza. Both sexes attempt to excel in the same sports and tests of physical endurance. T.V. shows, films, sports events and cultural activities are viewed together by the boys and girls. Cross-sex friendships are readily observable. Books and games enjoyed by one Kvutza member are readily circulated among the rest of the Kvutza, irrespective of gender. The Kvutza is responsible for the maintenance of their bayit*,

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*Bayit - children's house

vegetable garden and animal farm. These responsibilities are shared equally by members of both sexes.

Among the unique attributes of the culture studied were their clinical data. These data were available on all children within the society, hence allowing for a study of prevalence rates in disabilities rather than the all too common incidence rates reported in American studies. Prevalence refers to the natural occurrence of cases in a population, in contrast to incidence which refers only to cases that have been identified by specific sources.

Except for one Scottish study conducted by Margaret Clark (1970), prevalence rates are not reported in the literature on learning disability. Clark studied the entire community of Harmondsworth, Scotland, in order to ascertain the extent to which certain physiological variables, e.g., crossed dominance, eye-hand coordination, etc., were significant in reported cases of reading disability. Her rationale for a prevalence study is identical with the one held by this investigator as expressed by her following statement, "If one is to make a realistic assessment of the prevalence of, and need for provision for a certain disability, the community is the appropriate source of information, rather than incidence figures from clinics," (page 13).

Early diagnosis was an additional advantage afforded by kibbutz clinical data. This advantage is a result of the kibbutz form of education. It gives a more positive guarantee of early diagnosis than any other form of education. Since the child grows up in a children's home, he or she is under observation by an objective eye from the first days of life. Metaplot* whose approach is more objective and less affective

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*Metaplot - caretakers for the children in the kibbutz children's living quarters

than that of parents, can be helpful to the latter in connection with overcoming their reluctance to consult the experts. In a non-kibbutz family it is sometimes realized only late that the child is handicapped, particularly a first child, because there is no other child against whom to compare his/her development. Even when the parents sense that all is not well, they tend to overlook this, to delude themselves, it is so difficult to face the bitter truth and turn for help.

Method

The first and second research hypotheses advanced the ideas that no differences exist between kibbutz children on the basis of sex and reading level with respect to the correlates of crossed dominance and psychopathological scores.

The next three research hypotheses advanced for this study were that no differences exist between kibbutz boys and kibbutz girls on the basis of: (3) reading performance level; (4) reading readiness level; and (5) rate of maturational growth.

Research hypothesis (6) advanced the idea that both kibbutz boys and kibbutz girls will perceive the activity of reading as sex-appropriate.

The tested sample of 305 kindergarteners, second graders and fifth graders, were randomly drawn from a total population of 1871 kibbutz children within these grades.

Ninety-nine second-graders and one hundred and eight fifth-graders were administered Gina Ortar's (1975) Mivchan Havana Nikra, a standardized

reading test which tests for comprehension, vocabulary and word recognition. Different forms are available for each grade. In addition, these children were administered John Downing's (1975) Activity-Object Opinion Survey, a measure for sex role standards on reading. The reading scores were further used to discriminate two sub-groups within the tested population; superior readers and disabled readers. Those students whose scores fell within the 99th percentile of the Israeli population were classified as superior readers. Students whose scores fell within the bottom 15% of their classmates scores and attended remedial reading sessions were classified as disabled readers. The two sub-groups were administered the Edinburgh Handedness Test (1971) for crossed dominance. In addition, they were evaluated on the following 12 indices of psychopathology: organic speech deficits; cerebral palsy; epilepsy; mental retardation; schizophrenia; minimal brain damage; premature birth; pregnancy complications of the mother; birth complications; emotional disturbance; visual defects; and hearing defects. This information was derived from medical records. The records were analyzed according to nominal evidence rather than behavioral evidence. No subject was placed in a category unless that particular psychopathology was mentioned by name in the record by the professional who had conducted the diagnosis.

The Bender-Gestalt visual-motor coordination test served as both a reading readiness and a maturational measure (Koppitz, 1975). Forty-two kindergarten boys and fifty-five kindergarten girls were administered this test.

Results

No gender differences were evident in percentage of reading disability cases. Thirteen percent of both boys and girls were found to be reading disabled. (Boys = n = 13/102; Girls = n = 12/96.)

Crossed dominance, maturational lag, and twelve additional indices of psychopathology were found to be unrelated to cases of male reading disability.

An analysis of the data on twelve additional psychopathological symptoms did not demonstrate signigicant differences of occurrences between boys and girls in a superior reading group and between boys and girls in a reading disabled group.

Results of analyses of reading performance level and reading readiness level indicated no significant sex difference. In fact, levels obtained by both sexes were similar. The integer mean scores on the reading test in the second grade were exactly the same ($\bar{x} = 40$) for both sexes, while those for fifth grade and kindergarten did not differ significantly. (Fifth grade Boys, $\bar{x} = 41$; Girls, $\bar{x} = 39$: Kindergarten Boys, $\bar{x} = 7$; Girls, $\bar{x} = 6$.)

Sex role standards was the only variable found to be significant. In other words, both sexes perceived reading as sex-appropriate.

Discussion

In general, these analyses do not lend support to the physiological theories in this study purporting to explain male reading disability.

Only one relationship was supported by these analyses; that is, the relationship between sex role standards and reading performance. It would seem more parsimonious to assume therefore, even if sex-linked physiological factors exert an influence on learning ability, that within certain cultures, such as kibbutz, these factors may be held inoperative and a greater prevalence of male disabilities need not result. Thus, it would seem that culture can, at least, act as a threshold mechanism which triggers or suppresses the influence of possible physiological differences.

Such evidence should contribute to a rethinking of prevailing theories and practices in societies where boys demonstrate difficulties in reading. It should give educators pause to reconsider current popular American recommendations such as delayed school entrance for boys and sex-grouped reading instruction. Among the proponents for such recommendations are: Stouffer (1968), Pauley (1951), Wilson (1966), KernKamp and Price (1972), Lyles (1966), and Scheiner (1969).

The underlying purposes for such approaches are to alleviate the lowered self-esteem experienced by boys. Paradoxically, however, the converse tends to be true. These practices, one would suspect, crystallize what, initially, may have been fairly pliant cultural distinctions between the sexes, thereby contributing additional impetus to a pervasive stereotyping. Such stereotyping, regardless of its origin or intent, can only delimit individual freedom.

It is hoped that those questions raised by this study will serve to stimulate an expended search for cultural origins of reading and learning problems.

Suggestions for Further Research

This study has provided data indicating a lack of sex differences among kibbutz children in areas where universally these differences have been assumed to exist. Hopefully, this data can serve as a foundation upon which subsequent research can build a clearer understanding of those aspects of kibbutz up-bringing which most promote similar high performance from each sex. In pursuit of such understanding it is recommended that the following speculations of kibbutz structure be explored.

1. Coeducation, a system by which both sexes live together as equals and attend school together in a non-sexist, non-competitive environment from infancy through adolescence. The implication of this form of childrearing should be studied in detail to clarify its role in promoting equality between the sexes in learning performance and more significantly, what implications lie therein for American education.

2. Progressive Schooling, a permissive educational system where grading and testing are rejected and special tutoring is accepted as the "norm." This form of schooling might be making the appropriate individualized educational provisions for each sex, thereby avoiding the problems encountered in American education.

3. Comprehensive Health Services, services are offered both as preventive and therapeutic. In addition, they are accessible to all kibbutz children. Perhaps so comprehensive a service protects the more vulnerable male organisms from realizing its vulnerability to many pathologies?

These speculations and many others leave much which is yet to be

explored. This study was only limited to determining that boys in kibbutz read as well as girls, consider reading as sex-appropriate, and do not suffer a higher frequency of disabilities than girls. The "why" of these findings remain to be explained.

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Table 1

Two-Way Chi Square Analysis of Cerebral Dominance by Male Reading Level; Reading Disabled by Sex; combined Reading Level

		n	% with Dominance	n	% without Dominance	n	Total
Male Reading Level	Disabled Boy Readers	7	53.8 21. 12.7	6	46.2 27.3 10.9	13	23.6
	Superior Boy Readers	26	61.9 78.8 47.3	16	38.1 72.7 29.1	42	76.4
	Column Total	33	60.0	22	40.0	55	100.0
	Corrected Chi-Square = 0.04 with 1 degree of freedom n.s.						
Reading Disabled by Sex	Disabled Boy Readers	7	53.8 53.8 28.0	6	46.2 50.0 24.0	13	52.0
	Disabled Girl Readers	6	50.0 46.2 24.0	6	50.0 50.0 24.0	12	48.0
	Column Total	13	52.0	12	48.0	25	100.0
	Corrected Chi-Square = 0.04 with 1 degree of freedom n.s.						
Combined Reading Level	Reading Disabled	13	52.0 26.0 14.0	12	48.0 27.9 12.9	25	26.9
	Superior Readers	37	54.4 74.0 39.8	31	45.6 72.1 33.3	68	73.1
	Column Total	50	53.8	43	46.2	93	100.0
	Corrected Chi-Square = 0.00 with a 1 degree of freedom n.s.						

Table 2

t Test for Differences Between Mean Scores, By Sex, on a 13 Point Psychopathology Index for Kibbutz Reading Disability Children and Superior Reading Children

Variable	n	$\bar{X}$	S.D.	S.E.	t	df
Reading Disabled Boys	14	1.35	1.33	0.35	-2.31 n.s.	24
Reading Disabled Girls	12	2.66	1.55	0.44		
Superior Boy Readers	43	0.67	0.74	0.11	-1.61 n.s.	67
Superior Girl Readers	26	0.96	0.66	0.13		

Table 3

t Test for Differences Between Means in Reading Readiness and Reading Scores, by Sex, for Kibbutz Children

	Sex	Grade	n	$\bar{x}$	S.D.	S.E.	t	df
Readiness								
	Boys	K	42	7.02	5.24		.5 n.s.	
	Girls	K	55	6.45	5.62			
Reading	Boys	2	50	40.18	10.73	1.51	0.28 n.s.	94
	Girls	2	49	40.76	9.29	1.37		
Reading	Boys	5	52	40.63	9.43	1.30	1.18 n.s.	100
	Girls	5	50	38.66	7.32	1.03		

Table 4

Analysis of Variance of Masculine Scores on a Sex-Role Standards Test for Reading by Grade and Sex

Source of Variation	Sum of Squares	df	Mean Square	F
Main Effects				
Grade	20.82	1	20.82	13.02*
Sex	17.03	1	17.03	10.65*
2-way Interactions				
Grade x Sex	0.46	1	0.46	0.28
Residual	308.65	193	1.59	
Total	347.20	196	1.77	

*p = $<$.001